
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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ZINC IN JANUARY 1997

Domestic mine production in January 1997, expressed in zinc content of ore, increased by more than 8% over the previous month's production, but was still about 11% lower than in January 1996. Smelter production was about 1% lower than both the December and January 1996 production. Apparent consumption in January 1997 declined by 14% from the previous month's consumption, but was still more than 9% higher than in January 1996.

After a small drop in December 1996, the *Platt's Metals Week* composite price for North American Special High Grade zinc rose in January by 4.5%, and was 9% above the January 1996 price. The rising price of zinc metal was a reflection of declining stocks, which, in turn, caused a large (43%) increase in monthly sales from the U.S. Government stockpile.

The outlook for zinc mines in Alaska, at the beginning of the new year, looked promising. Cominco's Red Dog Mine is undergoing a major expansion that will increase annual production to more than 1 million metric tons of zinc concentrate. The \$200 million project is being funded in part (\$80 million) by the Industrial Development Bank of Alaska. The recently reopened Greens Creek Mine is to receive more than \$80 million for mine, mill, and port improvements. The mine, owned as a joint venture by Kennecott Greens Creek Mining Co. (70.3%) and Hecla Mining Co. (29.7%), shipped its first concentrate in November 1996.¹ Full production of about 40,000 tons of zinc in concentrate should be reached in the first quarter of 1997. The ongoing exploration in the vicinity of both the Red Dog Mine and Greens Creek Mine may extend their projected lives, presently estimated to be 40 and 17 years, respectively.

Anvil Range Mining Corp. offered 4.1 million of its shares to Cominco Ltd. for \$7 million, rejecting a take-over bid by Canada's Mineral Resources Corp. Cominco is the exclusive marketing agent for Anvil in Europe and was already holding

1.6 million shares. If the transaction is approved, Cominco will hold 28% of Anvil's outstanding shares, while Hyundai Corp., Anvil's Asian marketing agent, will retain 20% of the shares.² The money gained from the sale of shares reportedly will be used to restart Anvil's Faro Mine in Yukon Territory, which suspended mining operations in December 1996. Closure was preceded by declining ore content and delays in maintenance, causing an 11% drop in output of concentrate.

After protracted, and in the end, futile negotiations with the Aboriginal people, RTZ-CRA has decided to sell the Century Zinc Ltd. and Dugald River zinc deposits, both located in the Gulf of Carpentaria region in northern Queensland, Australia. Under the agreement, Pasminco Mining of Australia paid \$8 million for the rights to both properties, with the remaining \$274 million payable following the issue by the Queensland Government of valid leases needed to proceed in the development of the Century project and for the approval of the transfer of the Dugald River leases. Negotiations with the Aboriginal people will continue until February 13, 1997. If no agreement is reached by then, it will be followed by arbitration lasting 6 months, as provided by the Native Title Act of Australia. Pasminco envisages the beginning of overburden removal in late 1997. This would give the company enough time to start supplying its Budel smelter in the Netherlands with low-iron zinc concentrates, thus avoiding closure of the smelter because of excessive jarosite in the waste. Century reserves amount to 116 million tons grading 10.2% zinc, 2.3% lead, and 38 grams of silver per ton. Production is to reach 780,000 tons of zinc concentrate and 84,000 tons of lead concentrate.³

Western Metals of Australia began the development of the underground Kapok deposit, 4 kilometers from its Cadjebut Mine in Western Australia. Ore from the new mine will replace mill feed from the Cadjebut Mine, which is nearing depletion. The Kapok Mine is to come onstream in May 1997, eventually

supplying about 500,000 tons of ore containing 9.1% zinc and 7.1% lead. The total resource at Cadjebut, Kapok, and Goongewa, 10 kilometers (km) north of Cadjebut, is estimated at 6.7 million tons averaging 9.5% zinc and 4.5% lead.⁴ Another project under development is the Blendevale deposit, 50 km northwest of Cadjebut. That joint venture, between Western (60%) and Acacia Resources (40%), is scheduled to produce about 200,000 tons of concentrates containing some 100,000 tons of zinc and 33,000 tons of lead by 1998.⁵

Last year, the Australian Government gave approval for the development of the first stage of a 170,000-ton-capacity smelter in Townsville, Queensland, to be built by Korea Zinc Co. Ltd. Construction is to start at the end of the rainy season, either in April or May, and should be finished by the end of 1999. After completion, Korea Zinc is to undertake a feasibility study for the second stage, which would double the smelter's capacity and add a lead smelter.⁶

By agreeing to spend \$27.5 million over the next 4 years on exploration and development, Cominco Peru, a 100%-owned subsidiary of Cominco Ltd. of Canada, became a 60% partner

with the Colorado-based Solitario Resources in the Bongara zinc project in Peru. Solitario, a 60%-owned subsidiary of Crown Resources Corp., began working on the Bongara project in 1994, after the company secured a mineral lease on the 10,000 hectares (ha) of land in the northern part of the country. After exploration showed potential for a Mississippi Valley-type zinc deposit, Solitario expanded its claim to 70,000 ha.⁷

¹Mining Journal. Alaska's Zinc Mines Doing Well. V. 328, No. 8411, Jan. 10, 1997, p. 22.

²Metal Bulletin. Canada's Cominco Steps Into The Frame For Anvil Range. No. 8148, Jan. 27, 1997, p. 7.

³Platt's Metals Week. Pasmenco Buys RTZ-CRA's Century Zinc Project. Jan. 13, 1997, p. 7.

⁴_____. Western Metals To Develop Kapok Mine. Jan. 27, 1997, p. 6.

⁵Metal Bulletin. Western Approves Development Of Kapok. No. 8148, Jan. 27, 1997, p. 6.

⁶Mining Journal. Korea-Zinc Construction To Start. V. 328, No. 8142, Jan. 17, 1997, p. 40.

⁷Metal Bulletin. Cominco To Acquire 60% of Bongara Project. No. 8143, Jan. 9, 1997, p. 11.

TABLE 1
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1996				1997
	January	Jan.-Dec. p/	November	December	January
Production:					
Mine, zinc content of concentrate	54,900	603,000	42,800	44,800	48,600
Mine, recoverable zinc	52,400 r/	575,000	40,800	42,700 r/	46,400
Smelter, refined zinc	31,300	366,000 r/	32,000	31,200 r/	30,800 e/
Oxide (gross weight)	10,700	129,000 r/	11,100	11,400 r/	10,600
Consumption:					
Refined zinc, reported	56,300 r/	661,000	54,300	53,100 r/	47,400
Ores e/ (zinc content)	150 r/	1,800	150	150	150
Zinc-base scrap e/ (zinc content)	8,300 r/	100,000	8,300	8,300	8,300
Copper-base scrap e/ (zinc content)	14,000 r/	170,000	14,000	14,000	14,000
Aluminum- and magnesium-base scrap e/ (zinc content)	67 r/	800	67	67	67
Total e/	78,800 r/	933,000 r/	76,800	75,600 r/	69,900
Apparent consumption, metal 2/	92,500 r/	1,210,000	109,000	118,000 r/	101,000
Stocks of refined (slab) zinc, end of period:					
Producer 3/	8,990 r/	XX	14,200	13,700 r/	13,700 e/
Consumer 4/	66,100 r/	XX	60,500 r/	55,400 r/	56,100
Merchant	6,410	XX	4,720	4,800	5,510
Total	81,500 r/	XX	79,500 r/	73,900 r/	75,300 e/
Shipments of zinc metal from Government Stockpile	631	16,500 r/	2,810 r/	2,110 r/	3,020
Imports for consumption:					
Refined (slab) zinc	66,000	827,000	79,800	79,000	NA
Oxide (gross weight)	4,900	56,300	4,560	4,190	NA
Ore and concentrate (zinc content)	28	15,100	3,720	2,450	NA
Exports:					
Refined (slab) zinc	10	1,970	183	132	NA
Oxide (gross weight)	759	5,770	395	410	NA
Ore and concentrate (zinc content)	4,200	425,000	119,000	44,600	NA
Waste and scrap (gross weight)	4,430	45,500	3,510	3,310	NA
Price:					
London Metal Exchange, average, per metric ton	\$1,019.07	\$1,025.03	\$1,046.83	\$1,036.26	\$1,086.52
Platt's Metals Week North American Special High Grade, average, cents per pound	50.59	51.11	53.31	52.77	55.17

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

3/ Data from U.S. Geological Survey and American Bureau of Metal Statistics.

4/ Includes an estimate for companies that report annually.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

Month	Beginning stocks 2/	Production	Shipments	Ending stocks 2/
1996:				
January	7,120	31,300	29,400	8,990
February	8,990	29,400	29,800	8,610
March	8,610	30,400	31,100	7,860
April	7,860	29,800	29,400	8,280
May	8,280	30,500	30,800	8,040
June	8,040	30,400	30,300	8,130
July	8,130	30,800	30,100	8,830
August	8,830	27,400	26,300	9,920
September	9,920	30,800	29,700	11,100
October	11,100	32,300	31,400	11,900
November	11,900	32,000	29,700	14,200
December	14,200	31,200 r/	31,800 r/	13,700 r/
Total p/	XX	366,000 r/	360,000 r/	XX
1997:				
January e/	13,700	30,800	30,800	13,700

e/ Estimated. p/ Preliminary. r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
ZINC OXIDE PRODUCED 1/ IN THE UNITED STATES 2/

(Metric tons, gross weight)

Month	Beginning stocks	Production	Shipments	Ending stocks
1996:				
January	6,990	10,700	12,900	4,760
February	4,760	10,400	12,000	3,100
March	3,100	12,200	11,500	3,740
April	3,750	11,400	11,600	3,530
May	3,530	11,200	11,400	3,390
June	3,390	10,300	9,920	3,800
July	3,800	9,100	9,560	3,340
August	3,340	9,870	10,200	3,060
September	3,060	10,100	9,830	3,210
October	3,320	11,100	11,100	3,260
November	3,260	11,100	11,100	3,240
December	3,240	11,400 r/	11,100	3,540 r/
Total p/	XX	129,000 r/	132,000	XX
1997:				
January	3,540	10,600	10,900	3,250

p/ Preliminary. r/ Revised. XX Not applicable.

1/ Excludes impure zinc oxide produced from other processes.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
ESTIMATED DISTRIBUTION 1/ OF ZINC OXIDE SHIPMENTS BY INDUSTRY 2/ 3/

(Metric tons, gross weight)

Industry	1996				1997
	January	Jan.-Dec. p/	November	December	January
Agriculture	W	W	W	W	W
Ceramics	401	5,710 r/	435	454 r/	431
Chemicals	2,860	28,900 r/	2,550	2,570 r/	2,390
Paints	463	4,340 r/	332	308 r/	320
Photocopying	W	W	W	W	W
Rubber	8,580	87,500 r/	7,310	7,240 r/	7,250
Other	624	5,760 r/	476	503 r/	485
Total	12,900	132,000	11,100	11,100	10,900

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	1996				1997
	January r/	Jan.-Dec. p/	November	December r/	January
Galvanizing:					
Sheet and strip	36,800	494,000	44,400	48,300	42,400
Other	11,300	160,000 r/	14,700	17,300	13,600
Total	48,200	654,000 r/	59,100	65,600	56,300
Brass and bronze	10,800	155,000 r/	14,800	14,400	13,300
Zinc-base alloy	16,700	229,000 r/	18,200	21,200	18,000
Other uses 2/	16,800	172,000 r/	16,900	16,900	13,700
Total	92,500	1,210,000	109,000	118,000	101,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes zinc used in making zinc dust, wet batteries, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, zinc oxide, and miscellaneous uses not elsewhere specified.

TABLE 6
AVERAGE MONTHLY ZINC PRICES

Month	North American Special High Grade, ¢/lb.	LME cash	
		¢/lb.	\$/m.t.
1996:			
January	50.59	46.22	1,019.07
February	50.69	46.98	1,036.17
March	51.24	48.26	1,064.29
April	50.61	47.42	1,045.73
May	50.50	46.98	1,036.14
June	49.57	45.75	1,008.85
July	49.87	45.36	1,000.39
August	51.26	45.67	1,007.24
September	51.39	45.37	1,000.64
October	51.52	45.50	1,003.46
November	53.31	47.47	1,046.83
December	52.77	47.00	1,036.26
Year average	51.11	46.50	1,025.03
1997:			
January	55.17	49.28	1,086.52

Source: Platt's Metals Week.

TABLE 7
U.S. EXPORTS OF ZINC 1/

Material	1995		1996			
	Quantity (metric tons)	Value (thousands)	December		Jan.-Dec. 2/	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	3,080	\$4,340	132	\$160	1,970	\$2,350
Ore and concentrate (zinc content)	424,000	201,000	44,600	14,900	425,000	190,000
Waste and scrap (gross weight)	55,900	36,100	3,310	2,550	45,500	30,300
Powders, flakes, and dust (zinc content)	8,840	15,800	680	1,510	11,100	21,400
Oxide (gross weight)	7,090	9,110	410	640	5,770	9,430
Chloride (gross weight)	1,690	1,250	92	96	1,470	1,230
Sulfate (gross weight)	4,210	2,260	470	276	5,230	2,970
Compounds, other (gross weight)	1,690	4,350	38	201	1,250	4,670

1/ Data are rounded to three significant digits.

2/ January 1997 data not available at time of publication.

Source: Bureau of the Census.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1995		1996			
	Quantity (metric tons)	Value (thousands)	December		Jan.-Dec. 2/	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	856,000	\$903,000	79,000	\$84,800	827,000	\$882,000
Ore and concentrate (zinc content)	10,300	4,380	2,450	946	15,100	6,380
Waste and scrap (gross weight)	42,300	19,700	2,250	787	31,900	12,800
Powders, flakes, and dust (zinc content)	11,700	20,400	676	1,090	10,300	17,600
Oxide (gross weight)	49,100	54,200	4,190	4,290	56,300	57,500
Chloride (gross weight)	2,450	2,370	93	79	2,420	2,140
Sulfate (gross weight)	5,400	3,820	184	123	4,050	2,840
Compounds, other (gross weight)	1,850	2,490	84	117	1,190	1,280

1/ Data are rounded to three significant digits.

2/ January 1997 data not available at time of publication.

Source: Bureau of the Census.

TABLE 9
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Month	Beginning inventory	Shipments	Ending inventory
1996:			
January	274,000	631	273,000
February	273,000	830	272,000
March	272,000	--	272,000
April	272,000	1,220	271,000
May	271,000	--	271,000
June	271,000	1,430	270,000
July	270,000	1,870	268,000
August	268,000	1,460	266,000
September	266,000	2,550	264,000
October	264,000	1,630	262,000
November	262,000	2,810	259,000
December	259,000	2,110	257,000
Total	XX	16,500	XX
1997:			
January	257,000	3,020	254,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 10
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	1995	1996		1995	1996	
		December	Jan.-Dec. 2/		December	Jan.-Dec. 2/
Ore and concentrate (zinc content):						
Mexico	7,030	2,360	7,000	7,030	2,360	6,970
Peru	5,540	116	10,000	3,310	--	8,080
Other	463	--	322	15	91	91
Total	13,000	2,560	17,300	10,300	2,450	15,100
Blocks, pigs, or slab:						
Australia	15,400	--	6,970	18,200	--	7,350
Brazil	52,900	306	32,000	67,800	306	32,000
Canada	468,000	36,400	503,000	469,000	36,400	503,000
Finland	13,500	4,000	18,300	13,500	4,000	18,300
Mexico	99,200	9,800	93,900	99,200	9,800	93,900
Peru	21,500	1,200	23,800	21,500	1,200	23,800
Russia	12,800	6,120	24,100	12,800	6,120	24,100
Spain	109,000	8,020	83,200	98,000	10,900	91,400
Other	55,300	10,300	33,600	53,700	10,300	33,600
Total	848,000	76,100	819,000	856,000	79,000	827,000
Dross, ashes, & fume (content)						
	10,900	1,340	15,800	10,900	1,340	15,800
Grand total	872,000	80,000	852,000	877,000	82,800	858,000
Oxide (gross weight):						
Canada	24,800	2,190	28,600	24,800	2,190	28,600
China	3,040	--	2,070	3,040	--	2,070
Mexico	16,600	1,620	21,400	16,600	1,620	21,400
Other	4,640	384	4,420	4,640	384	4,310
Total	49,100	4,190	56,400	49,100	4,190	56,300
Other (gross weight):						
Waste and scrap	42,300	2,250	31,900	42,300	2,250	31,900
Sheets	332	1,290	16,900	332	1,290	16,900
Dust, powder, flakes	11,700	676	10,300	11,700	676	10,300

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ January 1997 data not available at time of publication.

Source: Bureau of the Census.